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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,481	07/28/2005	Carter Moursund	1137U004US11	5735
33893	7590	08/11/2008	EXAMINER	
JLB CONSULTING, INC. c/o INTELLEVATE P.O. BOX 52050 MINNEAPOLIS, MN 55402			LI, SHI K	
			ART UNIT	PAPER NUMBER
			2613	
			MAIL DATE	DELIVERY MODE
			08/11/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/516,481	<b>Applicant(s)</b> MOURSUND ET AL.	
	<b>Examiner</b> Shi K. Li	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 45-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 45-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/30/2004</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 45-46, 52-53, 55-56, 63-64 and 66-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (U.S. Patent 6,577,421 B1).

Regarding claims 45 and 67, Cheng et al. discloses in FIG. 1 a satellite terminal 12, a ground station 14 and a communication link 22 between the satellite terminal and the ground station. Cheng et al. teaches in FIG. 6 that the terminal monitors the signal quality (step 162). If the signal quality is below a threshold, then the terminal performs a scanning, collects position-intensity-data pairs and determines peak or optimal intensity position. Cheng et al. teaches in col. 13, lines 28-62 using a linear least-squares calculation to fit the alignment information to a parabolic equation. Cheng et al. teaches that under ideal circumstances, the method will find the position with peak (i.e., maximum) intensity. The difference between Cheng et al. and the claimed invention is that Chang et al. does not teach that if two positions of maximum signal quality are detected by said first receiver in said first predetermined path, then returning said first transceiver to the center between said two positions of maximum signal quality detected by said first transceiver in said first predetermined path. However, if there are two maximum points in the intensity-data pairs, the parabolic equation will generally find an optimal point in between the two maximum points due to the use of least-squares calculation. Thus it would have been

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obvious to one of ordinary skill in the art at the time the invention was made to use the center of the two maximum points as the optimal position in the alignment method of Cheng et al.

Regarding claim 46, Cheng et al. teaches in FIG. 6 monitoring bit error rate.

Regarding claims 52 and 55, Cheng et al. teaches in col. 14, lines 32 that the alignment process can be executed continuously or periodically. Furthermore, Cheng et al. teaches in FIG. 6 repeating the alignment process if the BER is inadequate.

Regarding claim 53, Cheng et al. teaches in col. 5, lines 49-51 wavelength of the communication light beam to be in the range from 0.8  $\mu\text{m}$  to 1.5  $\mu\text{m}$ , which is known as infrared (visible light is in the range 400~800 nm).

Regarding claim 56, Cheng et al. teaches in FIG. 2 processor 84 and in col. 7, line 62 memory.

Regarding claim 57, Cheng et al. teaches in FIG. 6 monitoring bit error rate.

Regarding claims 63 and 66, Cheng et al. teaches in col. 14, lines 32 that the alignment process can be executed continuously or periodically. Furthermore, Cheng et al. teaches in FIG. 6 repeating the alignment process if the BER is inadequate.

Regarding claim 64, Cheng et al. teaches in col. 5, lines 49-51 wavelength of the communication light beam to be in the range from 0.8  $\mu\text{m}$  to 1.5  $\mu\text{m}$ , which is known as infrared (visible light is in the range 400~800 nm).

3. Claim 47 and 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (U.S. Patent 6,577,421 B1) in view of Barford (U.S. Patent 6,816,988 B2).

Cheng et al. has been discussed above in regard to claims 45-46, 52-53, 55-56, 63-64 and 66-67. The difference between Cheng et al. and the claimed invention is that Cheng et al. does

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not teach 75% confidence interval. However, it is well known in the art that the confidence interval of a measurement depend on the number of samples. For example, Barford teach in FIG. 2 and FIG. 3 method for measuring BER within a predetermined confidence interval. The selection of a particular confidence interval is an engineering choice. One of ordinary skill in the art would have been motivated to combine the teaching of Barford with the modified terminal of Cheng et al. because the method of Barford minimizes the time required to establish BER to within some predetermined confidence intervals. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of Barford in the modified terminal of Cheng et al. because the method of Barford minimizes the time required to establish BER to within some predetermined confidence intervals.

4. Claims 48-49 and 59-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (U.S. Patent 6,577,421 B1) in view of Official Notice.

Cheng et al. has been discussed above in regard to claims 45-46, 52-53, 55-56, 63-64 and 66-67. The difference between Cheng et al. and the claimed invention is that Cheng et al. does not teach the size of the packets. Official Notice is taken that both the concept and the advantages of using different sizes of packets are well known and expected in the art. It would have been obvious to have used different sizes of packets based on the amount of data to be transmitted and the bit error rate of the transmission link. It is also noted that the maximum size and minimum size of an Ethernet frame are 1440 byte and 64 bytes, respectively.

Regarding claims 49 and 60, it is well known in the art to include sequential counter in packets to detect loss of packet and to allow data to be transferred in a connectionless mode where packets can arrive out of sequence.

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5. Claims 50-51 and 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (U.S. Patent 6,577,421 B1) in view of Endo et al. (U.S. Patent 5,329,395).

Cheng et al. has been discussed above in regard to claims 45-46, 52-53, 55-56, 63-64 and 66-67. The difference between Cheng et al. and the claimed invention is that Cheng et al. does not teach vertical, vertical or diagonal scanning path. Cheng et al. teaches in col. 13, lines 5-8 continuous scanning path. Endo et al. teaches in FIG. 9 and FIG. 10 various scanning path include vertical, vertical and diagonal scanning paths. Where the claimed differences involve the substitution of interchangeable or replaceable equivalents and the reason for the selection of one equivalent for another was not to solve an existent problem, such substitution has been judicially determined to have been obvious. See *In re Ruff*, 118, USPQ 343 (CCPA 1958). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to appropriate scanning pattern based on the kind of drifts that are expected.

6. Claims 54 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (U.S. Patent 6,577,421 B1) in view of Wissinger (U.S. Patent 5,475,520).

Cheng et al. has been discussed above in regard to claims 45-46, 52-53, 55-56, 63-64 and 66-67. The difference between Cheng et al. and the claimed invention is that Cheng et al. does not teach repeating scanning based on a spot size. Wissinger teaches in FIG. 8(A), FIG. 8(B), FIG. 8(C) and FIG. 8(D) to repeat the alignment process and reduce the spot size for focusing a light beam on the target transceiver. One of ordinary skill in the art would have been motivated to combine the teaching of Wissinger with the modified terminal of Cheng et al. because the approach of Wissinger refines the alignment process and concentrates the signal energy at the receiver and improves signal quality. Thus it would have been obvious to one of ordinary skill in

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the art at the time the invention was made to use the method of Wissinger in the modified terminal of Cheng et al. because the approach of Wissinger refines the alignment process and concentrates the signal energy at the receiver and improves signal quality.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (7:30 a.m. - 4:30 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl  
5 August 2008

/Shi K. Li/  
Primary Examiner, Art Unit 2613